BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5 : B05B 15/04, B05C 21/00 — A1

(11) International Publication Number: WO 90/15660

(43) International Publication Date: 27 December 1990 (27.12.9

(21) International Application Number: PCT/SE90/00405

(22) International Filing Date: 12 June 1990 (12.06.90)

(30) Priority data:
8902153-9 15 June 1989 (15.06.89) SE

(71) Applicant *(for all designated States except US)*: FRESCO LINE [SE/SE]; Prosten Janssons väg 31, S-439 00 Onsala (SE).

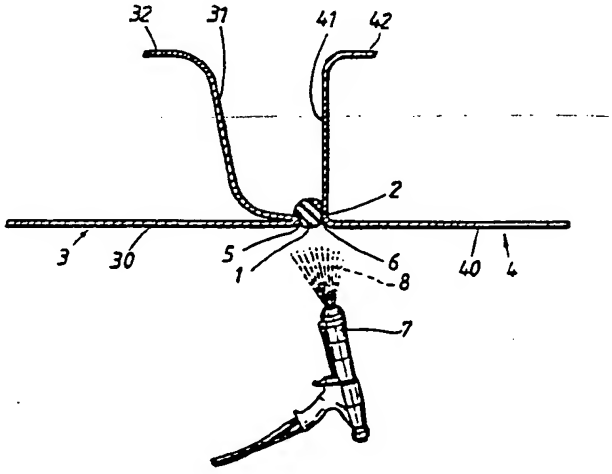
(72) Inventor; and
(75) Inventor/Applicant *(for US only)* : OLSSON, Michael [SE/SE]; Storegårdsgatan, S-502 49 Borås (SE).

(74) Agents: GRAUDUMS, Valdis et al.; Albihn West AB, Box 142, S-401 22 Göteborg (SE).

(81) Designated States: AT, AT (European patent), AU, BB, B (European patent), BG, BR, CA, CH, CH (Europe patent), DE*, DE (European patent)*, DK, DK (Eu pean patent), ES, ES (European patent), FI, FR (Eu pean patent), GB, GB (European patent), HU, IT (Eu pean patent), JP, KP, KR, LK, LU, LU (European p tent), MC, MG, MW, NL, NL (European patent), NO RO, SD, SE, SE (European patent), SU, US.

Published
With international search report.
In English translation (filed in Swedish).

(54) Title: A METHOD AND DEVICE FOR MASKING



(57) Abstract

The present invention relates to a method and a device for preventing a spray cloud from covering certain surfaces (31, 41) belonging to an object which is to be painted, whereby said surfaces are positioned in a different plane to those surfaces of the object which are to be painted and which surfaces can be reached by such spray cloud after passage through a gap. In the past, one has solved this problem by covering the surfaces (31, 41) with sheets, which were attached by means of tape. The invention solves this problem in a very simple manner by means of a body (1) which is attached in such a manner that it fills the whole gap whereby the spray cloud (8) is prevented from penetrating into the gap. Accordingly, the spray cloud is prevented from covering said surfaces (31, 41).

* See back of page

DESIGNATIONS OF "DE"

Until further notice, any designation of "DE" in any international application whose international filing date is prior to October 3, 1990, shall have effect in the territory of the Federal Republic of Germany with the exception of the territory of the former German Democratic Republic.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	ES	Spain	MC	Monaco
AU	Australia	FI	Finland	MG	Madagascar
BB	Barbados	FR	France	ML	Mali
BE	Belgium	GA	Gabon	MR	Mauritania
BF	Burkina Fasso	GB	United Kingdom	MW	Malawi
BG	Bulgaria	GR	Greece	NL	Netherlands
BJ	Benin	HU	Hungary	NO	Norway
BR	Brazil	IT	Italy	RO	Romania
CA	Canada	JP	Japan	SD	Sudan
CF	Central African Republic	KP	Democratic People's Republic of Korea	SE	Sweden
CG	Congo			SN	Senegal
CH	Switzerland	KR	Republic of Korea	SU	Soviet Union
CM	Cameroon	LI	Liechtenstein	TD	Chad
DE	Germany, Federal Republic of	LK	Sri Lanka	TG	Togo
DK	Denmark	LU	Luxembourg	US	United States of America

Title:

A Method and Device for Masking.

Technical area:

This invention relates to a method for painting and a device for carrying out the method, in accordance with the preamble of the following claim 1. The invention is preferably intended to be used in connection with re-spraying of vehicles.

Prior art and problems:

When respraying for example cars it is necessary to mask certain parts before the paint is applied. Masking means that certain parts are covered in an appropriate manner, e.g. paper which is fastened by tape, so that the paint cloud, which is to be applied, cannot come into contact with these masked parts. As an example of such parts, one can mention the outwardly facing surfaces of the plate that interconnects the outer skin and the inner skin of a door or a so called B-post. These plate surfaces are located in connection with panel gaps which are created for example between a door and a B-post. When one re-paints, one accordingly masks these parts, e.g. covers them, so that no polishing is required after the painting, in order to take away those paint particles which have found the way in through the gap and thereafter come into contact with these surfaces.

The known masking is made in such a manner that masking tape is used in order to fasten for example a piece of sheet-like paper, which has a form adopted to the geometry of that part which is to be protected.

Such masking is time-consuming and does not always totally prevent the paint cloud from reaching one of the surfaces.

A further problem in connection with this known technique is that the tape leads to the creation of an edge. This edge is very difficult to eliminate. Accordingly, it is possible to ascertain if a car has been repainted or not by means of said edge. Since repainted cars have a lower second-hand value than non-repainted cars, this is not desirable.

The solution and advantages:

The object of the invention is to achieve a method and a device for carrying out the method, which eliminates the mentioned disadvantages that are to be found in connection with known methods and devices.

This object is achieved by means of a device in accordance with the invention, whose characterizing features are specified in the following claim 1.

Brief description of the drawings:

The invention will now be described in more detail, as a way of example only, with reference to the annexed drawings, in which:

Fig. 1 shows a side-view of a car which has the device of the invention applied to it,

Fig. 2 shows a section, a chosen part of a car in accordance with Fig. 1,

Fig. 3 shows a device for storage of a device in accordance with the invention,

Fig. 4 is a sectional view of a device according to claim 3,

Fig. 5 is an alternative to the storage means, and,

Fig. 6, 7, 8, 9 show different alternative configurations of transversal sections of a device in accordance with the invention,

Fig. 10 shows the fitting of an alternative embodiment in a gap of a car door, when the door is open, and,

Fig. 11 shows a device in accordance with Fig. 10 when the door is closed.

In Fig. 1 there is shown a car, which before being resprayed, has been provided with a masking device 1 in accord-ance with the invention. The location of the section A-A in accordance with Fig. 1 and the transverse section which is shown in Fig. 2, should only be considered as showing the principle. For some cars the configuration deviates from what is shown in the section in Fig. 2, a deviation which may require adaption of the device in accordance with the invention, e.g. larger adhesive surface. The masking device 1, which preferably is made of a foam rubber, is applied in an outer transition area along the whole length of the gap, which is formed between the two adjacent parts 3,4, which are to be painted. In the figure, one of these parts is a door 3 and the other one that part 4 which surrounds the door 3. Also other areas, such as the boot and the bonnet, which comprise similar gaps, have also been provided with a masking device 1 in accordance with the above.

In Fig. 2 there is shown a section through a part of a car which is shown in Fig. 1. The masking device 1 is applied to that part 4 which delimits said gap. The attachment of the device 1 is preferably performed by means of an adhesive tape 2. The masking device 1 is compressible and, preferably, also resilient. Furthermore, the figure shows a part of a door 3 and a part of its interconnecting wall 31 which interconnects the inner skin 32 with the outer skin 30. The outwardly facing surface of said intermediate wall 31 is one of the parts

which is intended to be protected from receiving paint particles during the respray. Another such surface is the one belonging to another intermediate wall 41, which interconnects the outer plate 40 and the inner plate 42 of the surrounding area.

When painting with the spray gun 7 the paint cloud 8 is thrown towards the facing surfaces. The masking device 1 in accordance with the invention, prevents the paint cloud 8 from penetrating into the gap to reach the outwardly facing parts of the intermediate walls 31 and 41 respectively. Due to the compressibility of the masking device, it presses against the surfaces 5,6 of the opening of the gap so that sufficient pressure is achieved in order to hinder the paint cloud 8. If the masking device 1 is also resilient, a continuous, smooth transition 5,6 can be achieved between the repainted surface and the old surface, especially if the masking device has an appropriate form. An appropriate form means that the surface of the masking device is somewhat curved in that area where it meets the surface of the plate 5,6. This curvature can be achieved partly by prefabricating the masking device with the curved outer surface or by providing an object (for example a door), which moves the body so that the curvature of its outwardly facing surface is achieved, which in its turn creates said smooth transition.

In Fig. 3 and 4 there is shown an appropriate manner of storing the invention. The masking device 1 is hereby wound on the compression, in order to be space-saving. By winding it in such a manner that the adhesive part 2 is located along a common line, the one surface contacts the other layer so that it is compressed and that the wound masking device is kept in its wound state 4. Fig. 4 shows in more detail how a sectioned device being wound-up in accordance with the invention looks.

Fig. 5 shows an alternative way of storing the device. Here one stores the adhesive double-sided part 2 per se and the masking part 1 per se, preferably within one and the same container 9. When feeding it, both of these parts are arranged in such a manner that the double-sided adhesive part 2 is fed together with the masking device 1. The container 9 is arranged with some appropriate means for cutting the device.

Fig. 6, 7, 8 and 9 show four different alternative forms which indicate possibilities concerning the creation of different embodiments within the scope of the invention. The Fig. 6 shows the cylindrical embodiment which has been shown above. If one desires a larger contacting adhesive surface than this, it is appropriate to use an embodiment in accordance with Fig. 7 in which the size of the adhesive area has been enlarged.

In some instances it can be better with an embodiment which deflects when the door is shut. This embodiment accordingly implies that the above-mentioned curved form is created at the instance that the door, or a similar part, is closed. In Fig. 9 it is shown that a masking device with such a form can also have an adhesive surface of large size.

In Fig. 10 there is shown a preferred embodiment of the invention used together with the car, where the body 1 has a triangular form and the adhesive tape 2 is attached to the base surface thereof. The body 1 is attached to the side surface 41 of the B-post in such a manner that its outwardly exposed surface substantially in the same plane as the outer surface 40 which is to be painted. Thereafter, the door 3 is shut (Fig. 11), whereby the preferably elastic compressible body 1 is deformed in such a manner that a continuous smooth transition is achieved between the body 1 and the two contacting adja-

cent areas 5,6 of the door 3 and B-post respectively. It is appropriate to arrange the body with a bulb-like protruding part 11, which leads to large flexibility for the transition 6 between one surface 40, which is to be painted, and the other surface of the body 1, which is located adjacent to the adhesive part 2.

This embodiment has the advantage that one and the same body 1 can be used to seal mainly all different kinds of gaps with different dimensions, since the potential height of the seal is very large. Having a circular form, on tne other hand, may lead to problems in closing the door or to have the body 1 stay in the desired position.

With a device in accordance with the invention, very good results have been achieved when a longish body 4 was used, which transversal cut was rectangular. For sealing between doors of vehicles with four doors, the body had a preferred width of 35 mm and was 4 mm high. For other kinds of sealing around doors, two different sizes have been used, both having a height of 20 mm, one being 10 mm wide and the other 15 mm wide. The material was polyeter-foam-plastic.

It is obvious for the skilled man that the invention is not limited by the above described, but can be varied within the scope of the following claims. For instance, foam-plastic has been mentioned above as a suitable material, but it is evident that all kinds of different materials with similar properties may be used. Any kind of fibre-based body is an example of an alternative material, such as paper fibres. In such a case, however, the paper fibres need to have such a structure that they can counter-resist the pressure which is presented by the paint cloud 8.

Foam with a surface with adhesive qualities being produced in situ, is also possible to use. A pressure container with an outlet from which said foam would be produced, is accordingly an alternative embodiment.

Claims:

1. Method for preventing a paint cloud from covering certain surfaces (31,41) which belong to an object which is to be sprayed, whereby said surfaces (31,41) are positioned in a plane other than those surfaces of the object which are to be sprayed and which surfaces (31,41) may be reached by said paint cloud after passage through a gap, c h a r a c t e r i z e d in that said gap is blocked by means of a flexible device (1).

2. Method according to claim 1, c h a r a c t e r i z e d in that said flexible device has a certain resiliency.

3. Method according to claim 2, c h a r a c t e r i z e d in that said flexible device is attached by means of adhesive tape (2).

4. Method according to claim 1, c h a r a c t e r i z e d in that said flexible device is produced in situ.

5. Method according to claim 3, c h a r a c t e r i z e d in that said adhesive part (2) is attached on the body (1) in connection with feeding thereof.

6. Device for carrying out of the method in accordance with claim 1, in order to prevent the spray cloud from covering certain surfaces belonging to an object which is to be painted, whereby said surfaces are positioned in a different plane to those surfaces of the object which are to be painted and which surfaces can be

reached by said spray cloud after passage through a gap, c h a r a c t e r i z e d in that it comprises a longish, flexible body (1), which hinders transverse movement of a spray cloud therethrough, and at least one outer adhesive surface.

7. Device according to claim 5, c h a r a c t e r i z e d in that said body (1) comprises a longish prefabricated element which interacts with a longish adhesive means (2), which is also prefabricated.

8. Device according to claim 5, c h a r a c t e r i z e d in that said body (1) is made from a resilient material, preferably foam-rubber.

9. Device according to claim 5, c h a r a c t e r i z e d in that the body has continuous curved surfaces, in its attached state, at those locations (5,6) where the body interacts with an edge area of said gap.

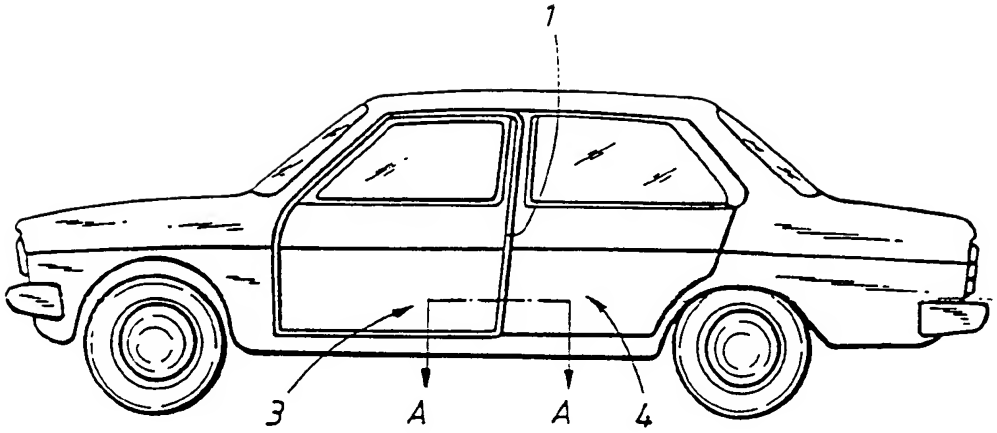


FIG. 1

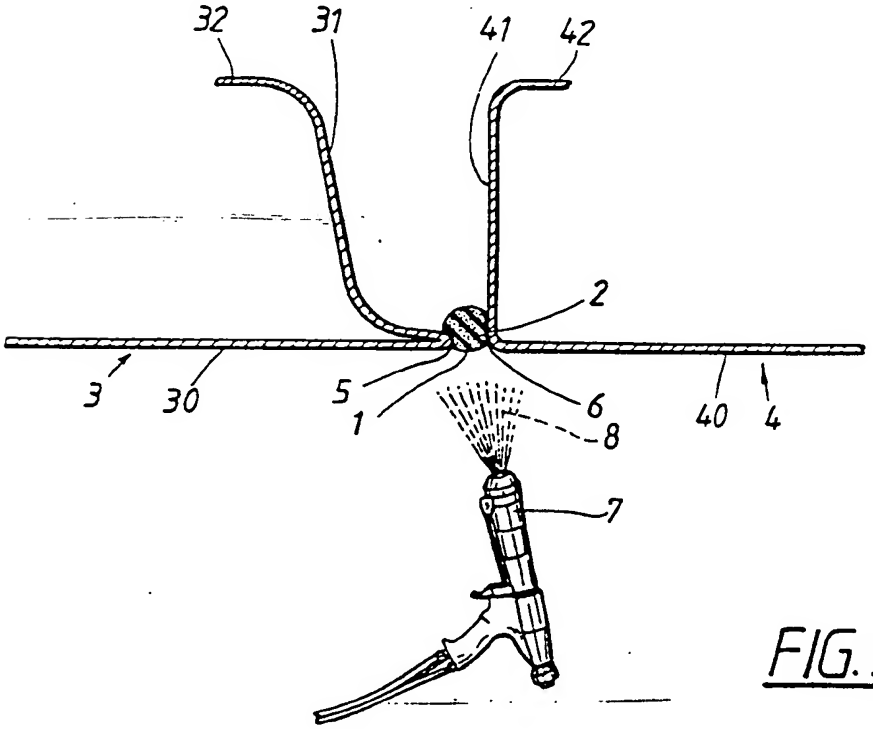


FIG. 2

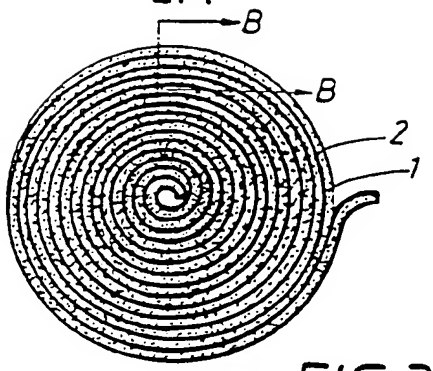


FIG.3

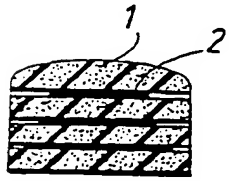


FIG.4

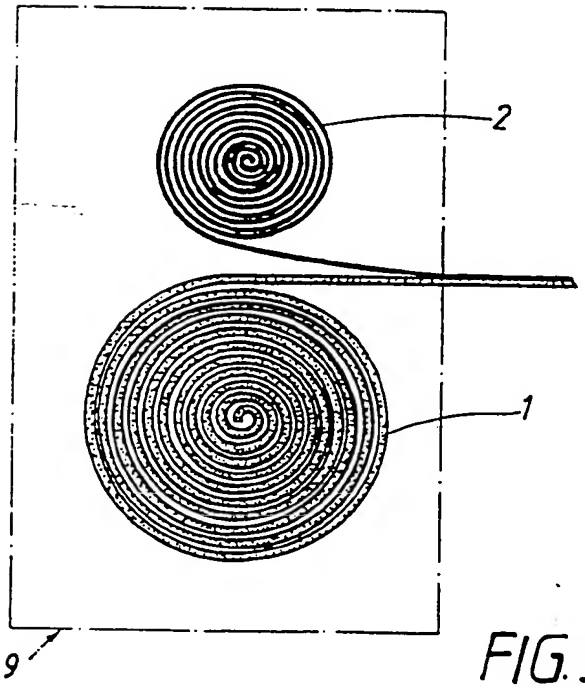


FIG.5

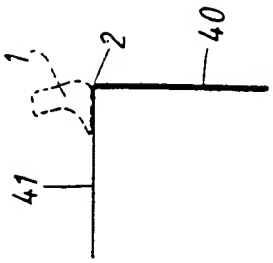


FIG. 9

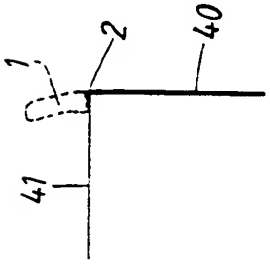


FIG. 8

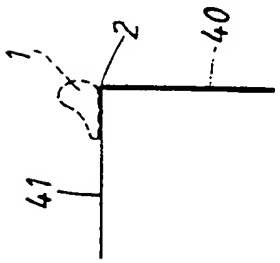


FIG. 7

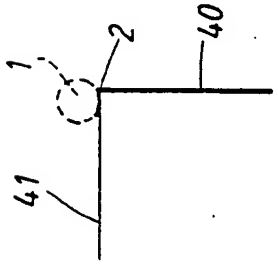


FIG. 6

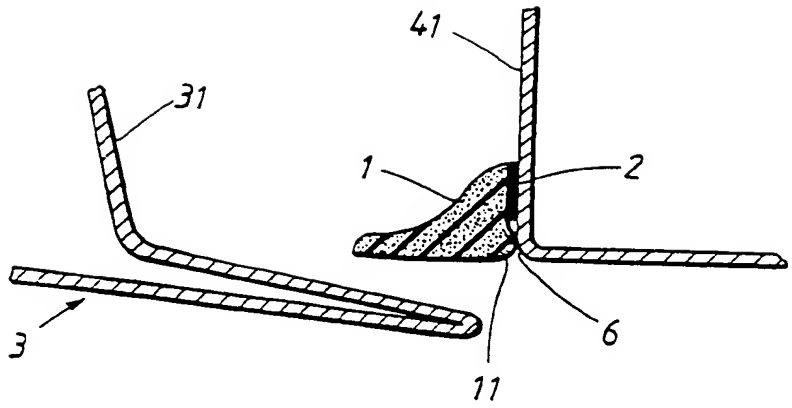


FIG.10

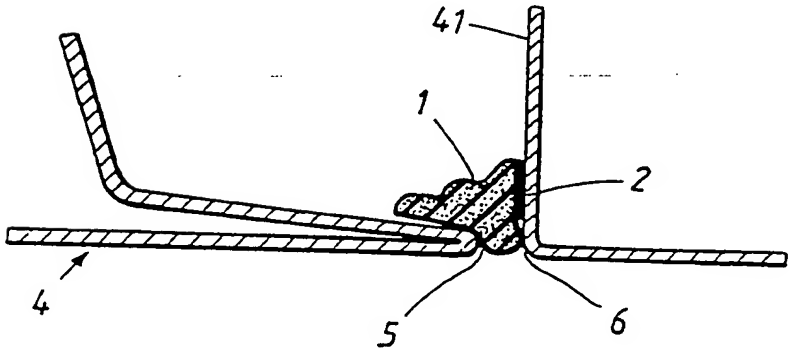


FIG.11

INTERNATIONAL SEARCH REPORT

International Application No PCT/SE 90/00405

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all)[6]

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC5: B 05 B 15/04, B 05 C 21/00

II. FIELDS SEARCHED

Minimum Documentation Searched[7]

Classification System	Classification Symbols
IPC5	B 05 B; B 05 C; B 05 D

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in Fields Searched[8]

SE,DK,FI,NO classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT[9]

Category *	Citation of Document,[11] with indication, where appropriate, of the relevant passages[12]	Relevant to Claim No.[13]
X	EP, A2, 0263637 (NAGOYA OILCHEMICAL CO., LTD.) 13 April 1988, see figure 1; claim 1 --	1,2,6,8
X	DE, A1, 2611631 (DAIMLER-BENZ AG) 6 October 1977, see figure 1; claim 1 --	1,2,6,8

---

* Special categories of cited documents: [10]

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step

"Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
28th August 1990	1990 -09- ! 0
International Searching Authority	**Signature of Authorized Officer**
SWEDISH PATENT OFFICE	Johan von Döbeln

Form PCT/ISA/210 (second sheet) (January 1985)

ANNEX TO THE INTERNATIONAL SEARCH REPORT ON INTERNATIONAL PATENT APPLICATION NO.PCT/SE 90/00405

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the Swedish Patent Office EDP file on 90-08-02
The Swedish Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
EP-A2- 0263637	88-04-13	EP-A-	0281036	88-09-07
		JP-A-	63213527	88-09-06
		US-A-	4931542	90-06-05
		JP-A-	63006860	88-01-12
		JP-A-	63006764	88-01-12
		JP-A-	63005997	88-01-11
DE-A1- 2611631	77-10-06	NONE		